Initial Study/Mitigated Negative Declaration

Floodplain Reconnection and Restoration on the La Barranca Unit, Sacramento River National Wildlife Refuge

November 30, 2005

Prepared for:

Department of Water Resources Flood Protection Corridor Program 3310 El Camino Avenue, Room 110 Sacramento, CA 95988

Prepared by:

River Partners 580 Vallombrosa Avenue Chico, California 95926

INTRODUCTION

This Initial Study provides supporting information for a proposed floodplain reconnection and restoration project on the La Barranca Unit of the Sacramento River National Wildlife Refuge. This Initial Study also covers the proposed future restoration and enhancement activities on the Blackberry Island Unit. Proposed activities will restore approximately 500 acres on the Units and includes the regrading of a 900-foot long levee and roads to better connect the river with the floodplain on the La Barranca Unit. The project also includes control of invasive weeds on additional areas. Compliance under the California Environmental Quality Act (CEQA) is required because of the state source of project funding. National Environmental Policy Act (NEPA) compliance is covered under a separate document.

Background

Project Proponent and Purpose

The Department of Water Resources Flood Protection Corridor Program, (FPCP) in collaboration with River Partners and the U.S. Fish and Wildlife Service (USFWS), proposes to implement a comprehensive floodplain reconnection and restoration and enhancement project on approximately 500 acres of the U.S. Fish and Wildlife Service's La Barranca Unit of the Sacramento River National Wildlife Refuge. This project will reconnect the river and restore topography to the floodplain currently blocked by floodplain obstructions (levee and roads); enhance (300 acres) and restore (200 acres) of the La Barranca Unit; evaluate and determine need to reduce potential fish entrapment hazards posed by frequently flooded gravel pits, and implement control measures for invasive non-native plant species. Enhancement includes the control of targeted invasive plants and potentially planting of areas. Restoration includes the planting and intensive maintenance to establish native riparian plants. Breeching or removing a 900-foot private levee to reduce flood damage will promote non-structural floodwater retention and reconnect the floodplain and river. Material from the levee breech or removal will be used to fill gravel pits to grade. Restoration will create a large contiguous block of new riparian habitat that will increase the resistance to conveyance of high flows and foster onsite transitory storage.

Project Objectives

Proposed project objectives are to:

- Reconnect the river; restore topography to the floodplain currently blocked by a 900-foot long private levee, and increase flood conveyance.
- Implement control measures for invasive non-native plant species.
- Enhance and restore wildlife habitat values on approximately 500 acres of the La Barranca Unit.

Funding may be received in the future for restoration on the remaining areas of the La Barranca Unit that is currently in walnut production. The project is the first phase of a

larger project to restore a total of 450 acres on the La Barranca Unit and 50 acres on the Blackberry Island Unit. The project includes additional weed control in areas with existing riparian vegetation.

Regulatory Compliance

National Environmental Policy Act Compliance

Currently, an Environmental Assessment (EA) for National Environmental Policy Act (NEPA) compliance is being completed by North State Resources under funding through the USFWS. The USFWS anticipates a Finding of No Significant Impact (FONSI).

California Environmental Quality Act Compliance

The California Environmental Quality Act (CEQA) requires that state and local government agencies consider the environmental consequences of projects over which they have discretionary authority before taking action on those projects. Under CEQA, the purpose of this initial study is to determine whether an environmental impact report (EIR), a negative declaration, or a mitigated negative declaration is needed. An EIR would be required if any "potentially significant impacts" were identified that could not be mitigated to a less-than-significant level. A negative declaration may be adopted if impacts are considered "less than significant," and a mitigated negative declaration may be adopted if the project would result in less than significant impacts with mitigation measures incorporated into the project.

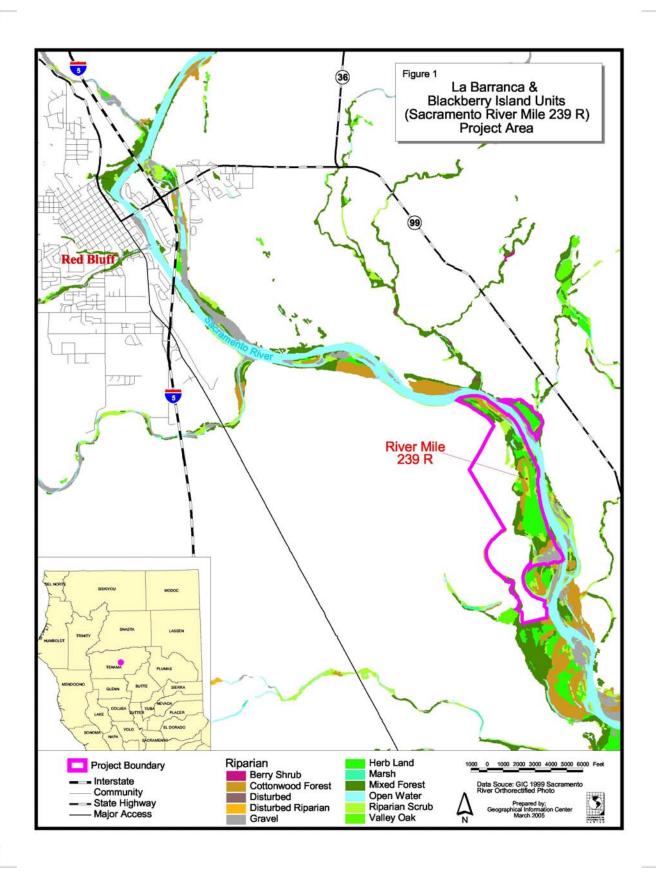
The project initial study (Appendix A, modeled from the Appendix G of the state CEQA Checklist Guidelines) evaluates impacts of the proposed project. Based on the project information, this initial study determines that a mitigated negative declaration is appropriate.

PROJECT DESCRIPTION

Project Area

The La Barranca Unit of the U.S. Fish and Wildlife Service Sacramento River National Wildlife Refuge is located in Tehama County, approximately 5 miles southeast of Red Bluff, California and 5 miles northeast of Gerber, California (Figure 1). It is located between Sacramento River Mile 237.5-239.5R. The La Barranca Unit is the northernmost property in a nearly 10-mile stretch of land in conservation ownership along the west bank of the Sacramento River. The Blackberry Island Unit is directly opposite the La Barranca Unit and occupies 63 acres.

The bank of the Sacramento River defines the eastern and southern borders of the La Barranca Unit (approximately 8,700 linear feet). The eastern portion of the site



encompasses approximately 367 acres that were impacted from gravel mining operations and contains existing riparian habitat. No active restoration will occur in this area. However, River Partners will employ weed control in targeted areas to eradicate non-native species, such as giant-reed (*Arundo donax*), tree-of-heaven (*Ailanthus altissima*), salt-cedar (*Tamarix ramosissima*), and broad-leaved pepperweed (*Lepidium latifolium*). The western area of the La Barranca Unit is currently managed as walnut orchards.

Project Background

On the La Barranca Unit of the Sacramento River National Wildlife Refuge, levee construction, agricultural conversion, and gravel extraction have eliminated or degraded much of the native riparian habitat and altered natural floodplain characteristics (North State Resources 2005).

The La Barranca Unit was intensely mined for gravel, which was used primarily for road bases and on-site levee construction to protect agricultural orchards. In the upstream end of the site, numerous swales from the north are not able to reconnect with the floodplain. Floodwaters from these swales connect and drain into the abandoned gravel pits and lack positive drainage after inundation (North State Resources 2005). With the lack of drainage, the abandoned pits pose a threat to native fish that utilize the floodplain during part of their life cycle.

The primary topographic feature in the interior of the project is an unpermitted, private levee that was most likely constructed to prevent floodwaters from entering the orchards. Flooding behind the levee is due primarily from high seasonal water tables or water flowing around the existing unpermitted levee. The existing interior levee does not allow flows to access the swales beyond it. Under existing conditions, the levee prevents flows accessing the swale and orchard area until outflanked by flows greater than the 20-year event. This occurs when an elevated road, near the upstream end of the project running perpendicular to the flow direction, is finally overtopped (GMA 2005).

In combination, the private levee and the elevated road prevents the floodplain from functioning as a healthy ecosystem. In addition, there is a disconnect as a result of the unpermitted levee and the trapping of floodwaters by gravel pits, which prevents flow to move across the floodplain and does not allow it to be slowed down and stored on the floodplain.

The proposed project would remove impediments to flood flows through the refuge and restore topography of the floodplain so that the connection between the floodplain and the Sacramento River is reestablished. Restoring the topography through the project area would improve overall floodplain storage capacity and potentially reduce peak flood stages in the adjacent river reach by providing a large area for transitory storage of water during river flood events (North State Resources 2005).

Implementation Plan

Once NEPA and CEQA compliance is concluded, River Partners will complete a thorough site assessment and restoration plan for the site. Additional details will be developed in the restoration plan. Below provides some details of the project stages.

Site Preparation

Existing Orchard

River Partners removed the existing orchards and performed weed control in targeted areas to eradicate non-native species, primarily Bermuda grass (*Cynodon dactylon*) and Johnson grass (*Sorghum halepense*). All the fields will be disked and landplaned to smooth the surface for irrigation and tractor operations (mowing and spraying). River Partners will be utilizing the existing mainline, sub-mainlines, well and pump that were installed for the orchards. Drip irrigation will be used to deliver water to each plant.

Existing Riparian Habitat

Removal of non-native species, such as giant-reed (*Arundo donax*), tree-of-heaven (*Ailanthus altissima*), salt-cedar (*Tamarix ramosissima*) and broad-leaved pepperweed (*Lepidium latifolium*), will be part of the enhancement of existing riparian habitat. Table 1 summarizes the various treatments that will be used to control selected non-native species.

Table 1. Weed control methods for targeted non-native species at the La Barranca Unit of the Sacramento River National Wildlife Refuge.

| Targeted Species | Treatment Method |
|--|---|
| Giant reed (Arundo donax), | Remove non-viable material from thicket to expose green viable material. Once viable material is exposed we will apply Round Up at the rate of 3% solution. This application will be done three times to ensure complete coverage. All viable (green) material will be removed from the site. |
| Tree-of-heaven (<i>Ailanthus altissima</i>) | Hack and squirt. The tree is not cut down, but a wound is made in the bark, usually with a hatchet, and undiluted herbicide is dribbled into the wound. The tree remains physiologically active, distributing the herbicide throughout its canopy and root system. Garlon 4 is the herbicide of choice. |
| Pepperweed (<i>Lepidium latifolium</i>) | A ground application of Telar in June followed with a clean up application to deal with any missed areas. Monitor carefully and apply Telar as needed the following year. |
| Tamarisk (<i>Tamarix ramosissima</i>) | Cut and paint. The tree is cut down and immediately (within an hour) painted with Garlon applied to the stump. This method has been successful on past control efforts. |
| Cactus | Dig up roots and then transport above ground plant material offsite. |

Riparian Restoration

The Sacramento River channel generally flows north to south in this area and overbank flows move southward across the site. All woody trees and shrubs will be planted in rows that will be oriented approximately parallel to flood flows.

Different vegetation communities will be planted based on hydrological and biological conditions. A plant design focused on a combination of riparian forest, woodland, scrub and grassland/savanna communities will target habitat requirements of anadromous fish, migratory birds and threatened and endangered species that occur or potentially occur at these refuge units. For example, to provide habitat for the western yellow-billed cuckoo, we may plant a cottonwood forest in close proximity to riparian scrub (scattered elderberries, coyote brush with tall herbaceous forbs). Planting elderberry shrubs, which are the host plant for federally endangered valley elderberry longhorn beetle (VELB), in either, a mixed riparian forest or in an elderberry savanna, will benefit this species. Additionally, the plant design, which may integrate habitat elements such as shaded riverine aquatic (SRA) and large woody debris (LWD), coupled with floodplain reconnectivity, will enhance and restore native fish populations.

In addition, to allow flood conveyance, corridors comprised of plants with low flood resistance, such as California blackberry (*Rubus ursinus*) and California wild rose (*Rosa californica*), will be planted. During a large flood event, these species do not act rigid, but instead lay down due to the weight of the floodwaters.

Floodplain Reconnection

Breeching segments of the existing private levee, which will reconnect the river and restore topography to the floodplain, will occur after the second year of active restoration. Material from the levee will be utilized to regrade minor topographical features. The grading effort is relatively modest and should be completed in a few days. The grading will proceed after the commencement of restoration activities to minimize any potential for erosion and help capture debris and sediment.

Maintenance

Weed control is necessary for the successful establishment of native plants and improvement of habitat. During the growing season, weeds along the planting rows should primarily be controlled by the timely spraying of Roundup® or a generic herbicide brand with glyphosate as the active ingredient. Rows will also be mowed with side mower and weed eater as needed. The aisles between the planted rows (centers) should be mowed or disked to minimize weed growth and propagation. Spraying and mowing should be implemented every 3-6 weeks during the growing season for at least the first two years.

In areas to be planted with herbaceous species, we will spray and mow for an entire season before planting. Once the herbaceous species are planted, weed control methods will be limited to mowing and possibly wicking with Roundup®.

Environmental Commitments

To avoid or minimize project-related effects and enhance the environmental quality of the project area, River Partners will implement the following environmental commitments. These measures will be implemented at a site-specific level, as appropriate. The identified measures include:

- All installation and maintenance work will avoid existing established riparian vegetation to the extent possible to minimize vegetation impacts.
- No ground disturbing work will occur within the active channel of the Sacramento River.
- Surface disturbance of soil and vegetation will be kept to a minimum and typical of the agricultural practices currently on site.
- Existing access and maintenance roads will be used wherever feasible.
- Any earthmoving will occur in the summer (low precipitation) months to reduce the likelihood of soil erosion or sediment discharge.
- Any levee removal or breeching will occur after restoration has commenced so that the vegetation can capture debris and sediment.
- Grading and scraping operations will be suspended when winds exceed 20 mph.
- Any stockpiled soil would be placed and sloped so that it will not be subject to accelerated erosion.
- The restoration will be planted in rows (20 feet apart) and oriented to generally follow the existing drainage patterns and to enhance floodwater conveyance.
- River Partners will comply with all applicable statutory herbicide application and notification regulations.
- If archeological resources are uncovered during a ground preparation activity, staff
 members will stop all activity within the immediate vicinity of the discovery, unless
 safety concerns are an issue. Staff will make an effort to protect resources or
 remains by flagging off the area. After activity has stopped, staff will immediately
 contact someone at the River Partners office and the US Fish and Wildlife Service
 (USFWS) via telephone. Written confirmation will also be turned in to USFWS.
 Activities resulting in the inadvertent discovery may resume after we receive a
 notice from USFWS.

References

- GMA. 2001. La Barranca Gravel Pit Restoration Project, 2001 Conceptual Grading Alternatives. Graham Matthews and Associates. Weaverville, California.
- GMA 2005. Hydraulic Analysis of La Barranca Project Alternatives. Graham Matthews and Associates. Weaverville, California.
- MBK Engineers 2005. Hydraulic Impact of La Barranca Project Alternatives. (DATE). Located at River Partners, Chico, California.
- North State Resources. 2005. Draft Environmental Assessment for Proposed Activities on the Sacramento River National Wildlife Refuge La Barranca and Blackberry Island Units.

Appendix A

Environmental Checklist / Initial Study

ENVIRONMENTAL CHECKLIST FORM / INITIAL STUDY

1. **Project Title**: Floodplain Reconnection and Restoration of the La Barranca Unit

2. Lead Agency Name and Address: Department of Water Resources

Division of Flood Management

3310 El Camino

Sacramento, CA 95821

3. **Contact Person**: Bonnie G. Ross

4. **Project Location**: The La Barranca Unit of the U.S. Fish and Wildlife Service Sacramento River National Wildlife Refuge is located in Tehama County, approximately 5 miles southeast of Red Bluff, California and 5 miles northeast of Gerber, California. It is located between Sacramento River Mile 237.5-239.5R.

5. **Project Sponsor's Name and Address**:

River Partners 580 Vallombrosa Avenue Chico, CA 95926

6. **Description of Project**:

The Department of Water Resources Flood Protection Corridor Program, (FPCP) in collaboration with River Partners and the U.S. Fish and Wildlife Service (USFWS), proposes to implement a comprehensive floodplain reconnection and restoration project on approximately 500 acres of the U.S. Fish and Wildlife Service's La Barranca Unit of the Sacramento River National Wildlife Refuge. This project will reconnect the river and restore topography to the floodplain currently blocked by man made obstructions (levee and roads); enhance and restore approximately 500 acres of the La Barranca Unit (restoration of 200 acres of an existing walnut orchard and enhancement of 300 acres of existing riparian habitat); evaluate and determine need to reduce potential fish entrapment hazards posed by frequently flooded gravel pits, and implement control measures for invasive non-native plant species. Breeching or removing a 900-foot private levee to reduce flood damage will promote non-structural floodwater retention and reconnect the floodplain and river. Restoration will create a large contiguous block of new riparian habitat that will increase the resistance to conveyance of high flows and foster onsite transitory storage. This Initial Study covers the proposed project and potential future restoration and enhancement activities on the La Barranca (450 acres of restoration) and Blackberry Island Units (50 acres of restoration plus approximately 30 acres of enhancement).

7. Surrounding Land Uses and Setting:

Refuge lands owned by the US Fish and Wildlife Service, consisting mostly of riparian habitat; border the majority of the project area. Privately owned agricultural lands border the western edge of the project area.

Environmental Factors Potentially Affected:The environmental factors checked below would potentially be affected by this project (i.e., the project would involve at least one impact that is a "Potentially Significant Impact"), as indicated by the checklist on the following pages.

| □Aesthetics □Biological Resources □Hazards and Hazardous Materials □Mineral Resources □Public Services □Utilities/Service Systems Determination: (To be completed by the | □Noise □Recreation □Mandatory Findings of Sign | ■Air Quality □Geology/Soils □Land Use/Planning □Population/Housing □Transportation/Traffic nificance |
|---|---|--|
| | <i>G</i> ,, | |
| On the basis of this initial evaluation: | | |
| X I find that the proposed project CO NEGATIVE DECLARATION will be | | ct on the environment, and a |
| I find that although the proposed p will not be a significant effect in th attached sheet have been added prepared. | is case because the mitigation m | neasures described on an |
| I find that the proposed project MA ENVIRONMENTAL IMPACT REF | | e environment, and an |
| I find that the project MAY have a has been adequately analyzed in (2) has been addressed by mitiga attached sheets, if the effect is a 'mitigated." An EIR is required, but | an earlier document pursuant to tion measures based on the earl 'potentially significant impact" or | applicable legal standards, and ier analysis as described on "potentially significant unless |
| □ I find that although the proposed p WILL NOT be a significant effect in been analyzed adequately in an eleavoided or mitigated pursuant to the are imposed upon the proposed p | in this case because all potential earlier EIR pursuant to applicable hat earlier EIR, including revision | ly significant effects (1) have standards, and (2) have been |
| 0: | | |
| Signature | Date | |
| Printed Name | For | |

ENVIRONMENTAL CHECKLIST

| Issues | Potentially Significant Impact | Potentially Significant Unless Mitigation Incorporated | Less Than Significant Impact | No Impact or Positive Impact |
|---|--------------------------------------|--|------------------------------------|------------------------------------|
| I. AESTHETICS. Would the proposal: | | | | |
| a. Have a substantial adverse effect on a scenic vista? | | | | |
| b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings along a scenic highway? | | | | • |
| c. Substantially degrade the existing visual character or quality of the site and its surroundings? | | | | |
| d. Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area? | | | | • |
| This project will positively impact aesthetics. Propos existing agricultural practices. With the removal of the vegetation, river views and the scenic vista from hom River would improve. Views of riparian vegetation as Sacramento River corridor would also improve. | ne levee and nes on the e | d restoration east side of the | of riparian e Sacrame | nto |
| | | | | |
| | | Potentially | | |
| Issues | Potentially Significant Impact | Potentially Significant Unless Mitigation Incorporated | Less Than Significant Impact | No Impact or Positive Impact |
| Issues II. AGRICULTURAL RESOURCES. In determining whether impacts on agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation. Would the project: | Significant | Significant Unless Mitigation | Significant | or Positive |
| II. AGRICULTURAL RESOURCES. In determining whether impacts on agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation. Would the project: a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the | Significant | Significant Unless Mitigation | Significant | or Positive |
| II. AGRICULTURAL RESOURCES. In determining whether impacts on agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation. Would the project: a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the | Significant | Significant Unless Mitigation | Significant | or Positive |

According to the Farmland Mapping and Monitoring Program (FMMP), much of the land on the

La Barranca Unit is high quality and falls under special farmland categories (North State

Floodplain Reconnection and Restoration La Barranca Unit Initial Study

Resources 2005). About 45-50 acres of this site, for example, are Columbia fine sandy loam which is a prime soil when irrigated. The soils on the remainder of the site are a mix of riverwash and Columbia complex channeled, both of which are non-prime soil types.

The site was purchased by the US Fish and Wildlife Service in 1991. Two hundred acres of the site were a walnut orchard that was removed in 2005. The remaining 250 acres are a low value riparian habitat. Because the site has a high water table and floods frequently, the orchard's production was impaired and the prior owner suffered damages from inundation and sedimentation that contributed to his willingness to sell the land to the Fish and Wildlife Service.

Evaluation under the California Land Evaluation-Site Assessment (LESA) Model was not deemed appropriate since this project concerns protected resource lands and not "Land Committed to Nonagricultural Use" by virtue of urban development. Such a determination is consistent with CEQA Statutes Section 21095, which makes use of LESA an "optional methodology." Under the LESA model the proposed project would not qualify as "Land Committed to Nonagricultural Use" as such land is designated as having received discretionary development approvals such as a tentative subdivision map, tentative or final parcel map, or recorded development agreement. (Department of Conservation California Agricultural LESA Model 1997 Instruction Manual (Manual) at page 26). In contrast, the proposed project falls within the California LESA model definition of "protected resource lands." The model defines protected resource lands as "those lands with long term use restrictions that are compatible with or supportive of agricultural uses of land. Included among them are the following: publicly owned lands maintained as park, forest, or watershed resources; and lands with agricultural, wildlife habitat, open space, or other natural resource easements that restrict the conversion of such land to urban or industrial uses" (Manual at page 28).

The proposed project would restore some agricultural acreage to native riparian habitat, effectively removing it from agricultural production; however, the proposed project would not cause serious degradation or elimination of the physical or natural conditions that provide the site's values for farming nor be irreversible. The project would re-establish long-term processes and functions present in riparian habitat communities, including the natural formation of soils that gave these sites their original agricultural value. Because the agricultural value of the soil is tied directly to the natural conditions and processes that existed before commercial agricultural development of the land, habitat restoration efforts would in effect be preserving (and possibly improving over time) the values that make the soil useful for agriculture (Cannon 2004, Tilman et al. 1996 and 2002). Returning the land to cultivation would require only removing the native vegetation and implementing some soil preparation, which is similar to the requirements of the original clearing of habitat necessary to create farmed land decades ago. This contrasts to farmland converted to urban uses, where construction of infrastructure and buildings and the compaction and paving of soils makes the conversion irreversible.

Finally, the proposed project would not stop or hinder the agricultural practices that occur on neighboring properties. SRNWR endeavors to be good neighbors in their property management. SRNWR policies include those addressing maintenance of fire breaks and vegetation buffers that are carried into project design to minimize incompatibilities with active agricultural operations on adjacent properties.

For these reasons, this impact is considered less than significant

| | Issues | Potentially Significant Impact | Potentially Significant Unless Mitigation Incorporated | Less Than Significant Impact | No Impact or Positive Impact |
|-----------------|---|--------------------------------------|--|------------------------------------|------------------------------|
| criteri mana | IR QUALITY. Where available, the significance in established by the applicable air quality agement or air pollution control district may be relied to make the following determinations. Would the | | | | |
| propo a. | osal: Conflict with or obstruct implementation of the applicable air quality plan? | | | | |
| b. | Violate any air quality standard or contribute substantially to an existing or projected air quality violation? | | | | |
| C. | Result in a considerable net increase of any criteria pollutant, which the project region is non-attainment under any applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)? | | | | • |
| d. | Expose sensitive receptors t o substantial pollutant concentrations? | | | | |
| e. | Expose sensitive receptors t o substantial pollutant concentrations? | | | | |

The proposed project does not involve the construction of infrastructure that would result in a long-term increase in air emissions that would result in changes to regional air quality. However, project construction activities will likely result in short-term changes to air quality in the immediate vicinity of the project site, which are similar impacts as historical agricultural activities on the project site and in the surrounding area. Fugitive dust and agricultural burn permits will be secured from the Tehama County Air Pollution Control District prior to construction.

Temporary impacts to air quality could result from earth moving activities and vehicle travel on unpaved roads. Dust can be emitted by the action of equipment and vehicles and as a result of wind erosion over exposed earth surfaces. Grading and earthmoving activities, although minimal, comprise the major source of construction dust emissions, but traffic and general disturbance of the soil also generate dust emissions. Short-term impacts would be mostly related to particulate matter emissions, but a minor increase in exhaust emissions produced during the transport of workers and machinery to and from the site may also occur. These impacts are temporary, and therefore considered to be less than significant with the implementation of best management practices identified measures described in Environmental Commitments.

This project will have a long-term positive impact on air quality. After riparian woody and herbaceous understory species are established, air quality will be improved over existing fallow conditions.

| Issues | Potentially Significant Impact | Potentially Significant Unless Mitigation Incorporated | Less Than Significant Impact | No Impact or Positive Impact |
|---|--------------------------------------|--|------------------------------------|------------------------------------|
| IV. BIOLOGICAL RESOURCES. Would the project: | | | | |
| a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? | | | • | |
| b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? | | | • | • |
| c. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marshes, vernal pools, coastal wetlands, etc.) through direct removal, filling, hydrological interruption, or other means? | | | • | |
| d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites? | | | | • |
| e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? | | | | |
| f. Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan? | | | | • |

This project will benefit native vegetation and wildlife habitat. As part of a 10-mile long riparian corridor protected under public ownership, the La Barranca Unit has excellent wildlife potential because of its proximity to the Sacramento River and existing riparian vegetation. One of the primary goals of this riparian restoration project is to benefit anadromous fish, migratory birds, waterfowl, threatened and endangered species and resident riparian wildlife and plants that occur or potentially occurs at these refuge units. This includes threatened and endangered species, such as Chinook salmon, valley elderberry longhorn beetle (VELB), Western Yellow-billed Cuckoo; Willow (Pacific Slope) Flycatcher and Least Bell's Vireo, American Bald Eagle and Bank Swallow.

The proposed floodplain reconnection and restoration activities would enhance existing riparian vegetation and improve habitat quality by controlling and removing invasive species, restoring the diversity of native plants and plant communities, and improving wildlife habitat for threatened

and endangered species. Under the proposed action, control measures would be implemented for targeted invasive, non-native plant species (e.g. giant reed, tree-of heaven, pepperweed, and tamarisk). Non-native invasive species are a concern because, once established, these species are likely to decrease the quality of wildlife habitat; become increasingly difficult to control; competitively exclude native plants and prevent their recruitment; and provide a seed source for invasion of other riparian areas. Thus, implementing control measures would provide an overall benefit to native habitats and improve habitat quality for target wildlife species in the project area and vicinity (North State Resources 2005). Through execution of the proposed activities, we expect significant increase in wildlife usage before the completion of the project (within 3 years).

Special care would be taken during implementation of the proposed action to minimize impacts to native vegetation and sensitive natural communities, as well as disturbances to nesting and foraging areas by special-status species. To the extent possible, ground-disturbing restoration activities would be limited to areas occupied by gravel/sandbar, orchard, and herbaceous cover that are currently dominated by non-native species and are not sensitive natural communities. Some areas with native and non-native annuals would be disturbed, but no perennial riparian vegetation would be displaced (North State Resources 2005). Grading and other ground-disturbing activities shall be scheduled to avoid nesting season for special-status species, such as Swainson's hawk. However, if nesting season cannot be avoided, measures will be taken to remove vegetation prior to the onset of nesting season to preclude nesting.

| Issues | Potentially Significant Impact | Potentially Significant Unless Mitigation Incorporated | Less Than Significant Impact | No Impact or Positive Impact |
|--|--------------------------------------|--|------------------------------------|------------------------------|
| V. CULTURAL RESOURCES. Would the proposal: | | | | |
| a. Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5? | | | | • |
| b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5? | | | | • |
| c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? | | | | • |
| d. Disturb any human remains, including those interred outside of formal cemeteries? | | | | • |

This project will not impact cultural resources. No previously recorded prehistoric or historic resource sites were identified to occur within the project boundaries. However the site is considered to be sensitive for prehistoric, ethnographic, and/or historic cultural resources given finds in the area (North State Resources 2005). Cultural resource studies were conducted in compliance with Section 106 of the National Historic Preservation Act (NHPA). Archaeological reconnaissance in the La Barranca Unit took place on October 8 and 24-27, 2002. A total of one archaeological site and nine isolated finds were encountered during surveys of the unit and adjacent areas. None of these finds are located on USFWS property.

On February 2, 2005, the Refuge submitted a Request for Cultural Resource Compliance to the USFWS Cultural Resources Team (CRT). On April 1, 2005, the CRT provided a Section 106 Compliance memorandum documenting the CRT's determination that the proposed project falls under Appendix A based on the types of proposed activities and the results of previous surveys in the project area. The project will be reported to the SHPO in the FY2005 annual report to be submitted in late 2005 (North State Resources 2005).

In the event archeological resources are uncovered during a ground preparation activity, staff members will stop all activity within the immediate vicinity of the discovery, unless safety concerns are an issue. Staff will make an effort to protect resources or remains by flagging off the area. After activity has stopped, staff will immediately contact someone at the River Partners office and the US Fish and Wildlife Service (USFWS) via telephone. Written confirmation will also be turned in to USFWS. Activities resulting in the inadvertent discovery may resume after we receive a notice from USFWS.

| Issues | Potentially Significant Impact | Potentially Significant Unless Mitigation Incorporated | Less Than Significant Impact | No Impact or Positive Impact |
|--|--------------------------------------|--|------------------------------------|------------------------------------|
| a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: 1. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication | | | | • |
| 42. 2. Strong seismic ground shaking? 3. Seismic-related ground failure, including liquefaction? 4. Landslides? b. Result insubstantial soil erosion or the loss of topsoil? c. Be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project and potentially result in an onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse? | | | | • • • |
| d. Be located on expansive soil, as defined in Table 18- 1-B of the Uniform Building Code (1994), creating substantial risks to life or property? | | | | • |
| e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater? | | | | • |

This project will have no significant impact on soils nor will it increase exposing the public to potential geologic hazards. Restoring riparian woody vegetation will help minimize erosion and capture sediment during flood events. Areas disturbed by grading will be seeded or plugged with native grasses to reduce wind and water erosion.

| Issues | Potentially Significant Impact | Potentially Significant Unless Mitigation Incorporated | Less Than Significant Impact | No Impact or Positive Impact |
|--|--------------------------------------|--|------------------------------------|------------------------------------|
| VII. HAZARDS AND HAZARDOUS MATERIALS. Would the proposal involve: | | | | |
| a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? | | | | • |
| b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment? | | | | • |
| c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? | | | | • |
| d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment? | | | | |
| e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area? | | | | • |
| f. For a project located within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area? | | | | • |
| This project will have no impact on hazards and hazards survey was conducted prior to the acquisition of the known hazardous waste sites are located on the La E | La Barranca | a Unit by the | | |
| Issues | Potentially Significant Impact | Potentially Significant Unless Mitigation Incorporated | Less Than Significant Impact | No Impact or Positive Impact |

VIII. HYDROLOGY AND WATER QUALITY. Would the proposal:

| Issues | Potentially Significant Impact | Potentially Significant Unless Mitigation Incorporated | Less Than Significant Impact | No Impact or Positive Impact |
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| . Violete en mater malita et en dende en mete | | | | |
| a. Violate any water quality standards or waste discharge requirements? | | | | |
| b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge, resulting in a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)? | | | | |
| c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation onsite or offsite? | | | • | |
| d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding onsite or offsite? | | | • | |
| e. Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff? | | | | • |
| f. Otherwise substantially degrade water quality? | | | | |
| g. Place housing within a 100-year flood hazard area, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map? | | | | • |
| h. Place within a 100-year flood hazard area structures that would impede or redirect floodflows? | | | | |
| i. Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam? | | | | • |
| j. Contribute to inundation by seiche, tsunami, or mudflow? | | | | |

Project alternatives were evaluated with a 1-d hydraulic model. Project effects on channel and floodplain hydraulics are considered quite small and are not likely to result in any significant negative impacts either within or outside of the project area, based on information available at the time of the analysis. Hydraulic evaluations indicated that the significant changes in water surface elevations are generally localized to a small portion of the project area, either immediately around the area of grading or where floodplain roughness is changed appreciably from existing conditions due to the proposed planting density. Overall, the maximum increase in

water surface elevation due to the project is 0.44 feet or about 5 inches. This is considered a minor change and is probably on the limit of what could be measured in an actual flood event (GMA 2005). Further analysis has shown that this increase is a result of expanded floodplain storage and not because of vegetation impacts (MBK Engineers 2005). Implementing the project would not change the delineation of the FEMA 100-year floodplain. All increases in water surface elevation diminish rapidly in the upstream direction and are essentially contained within the project area (GMA 2005).

It is possible that water quality may be affected during restoration and levee degradation activities as a result of erosion caused by ground disturbance. Because of the close proximity of the earthmoving work to the Sacramento River, the following mitigation measures and best management practices (BMPs) will be implemented:

- No ground disturbing work will occur within the active channel of the Sacramento River.
- Surface disturbance of soil and vegetation will be kept to a minimum and typical of the agricultural practices currently on site.
- To minimize soil erosion during project implementation, all earthmoving will occur in the summer (low precipitation) months.
- Stabilize disturbed soils near levee removal areas and fill areas before the onset of the winter rainfall season. Disturbed areas will be reseeded with native grasses.
- Avoid existing established riparian vegetation to the extent possible to minimize vegetation impacts.
- Any levee removal or breeching will occur after restoration has commenced so that the established vegetation can capture debris and sediment.
- Grading and scraping operations will be suspended when winds exceed 20 mph.
- Any stockpiled soil would be placed, sloped, and seeded or otherwise protected so that it will not be subject to accelerated erosion.
- Leave drainage gaps in piles of fill material to accommodate surface water runoff.
- Piles of fill material shall be located such that they do not drain directly into a surface feature, if possible.
- Use bales or silt fencing as appropriate to control erosion during site excavation/levee breeching or removal.

| Issues | Potentially Significant Impact | Potentially Significant Unless Mitigation Incorporated | Less Than Significant Impact | No Impact or Positive Impact |
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| IX. LAND USE AND PLANNING. Would the proposal: | | | | |
| a. Physically divide an established community? b. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect? | | | | • |
| c. Conflict with any applicable habitat conservation plan or natural community conservation plan? | | | | |

This project will have no impact on land use and planning. The land is owned by the US Fish and Wildlife Service (USFWS) and is bordered by USFWS Refuge lands on all but the western edge, which is bordered by orchards. Converting the weed-dominated, abandoned agricultural fields in the project area to quality riparian and wetland habitat will reduce seed sources of invasive and noxious weeds.

| Issues | Potentially Significant Impact | Potentially Significant Unless Mitigation Incorporated | Less Than Significant Impact | No Impact or Positive Impact |
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| X. MINERAL RESOURCES. Would the proposal: | | | | |
| a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State? | | | | • |
| Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan? | | | | |
| This project will have no effect on mineral resources. | | | | |

| | Potentially | Potentially Significant Unless | Less Than | No Impact |
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| Issues | Significant Impact | Mitigation Incorporated | Significant Impact | or Positive Impact |
| XI. NOISE. Would the proposal result in: | | | | |
| a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? | | | | • |
| b. Exposure of persons to or generation of excessive ground borne vibration or ground borne noise levels? | | | | |
| c. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? | | | | • |
| d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project? | | | | • |
| e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels? | | | | • |
| f. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels? | | | | • |

This project will have no impact on noise. The project area is situated within a predominantly agricultural region. Because the area is predominantly agricultural, temporary noise generation from farm and ranch machinery is common. The project area is bordered by other federally owned lands to the south, privately owned agricultural parcels to the north and west, and by the Sacramento River on the east. Noise sensitive land uses that have been identified in the project area include private residences in the vicinity of the La Barranca Unit and recreation use of the river corridor (North State Resources 2005).

Noise levels during implementation will come from the operation of tractors during field preparation, planting, and maintenance. This is normal agricultural noise common to this area, which will be minimized by the surrounding dense vegetation. After the three-year implementation period, these activities will cease.

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| | Potentially | Significant Unless Mitigation | Less Than | No Impact |
| Issues | Significant Impact | Incorporated | Significant Impact | or Positive Impact |
| XII. POPULATION AND HOUSING. Would the proposal: | | | | |
| a. Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)? | | | | - |
| Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere? | | | | |
| c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere? | | | | |
| This project will have no impact on population and housing. The land was purchased by USFWS as part of the Sacramento River National Wildlife Refuge. Goals of the National Wildlife Refuge System include to preserving, restoring, and enhancing their natural ecosystems. This project will not increase population growth in the area or displace existing housing. Being part of the Refuge protects the project area from future development. | | | | |
| Issues | Potentially Significant Impact | Potentially Significant Unless Mitigation Incorporated | Less Than Significant Impact | No Impact or Positive Impact |
| XIII. PUBLIC SERVICES. Would the proposal: | | | | |
| a. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or a need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services: | | | | • |
| Fire protection? | | | | |
| Police protection? | | | | |
| Schools? | | | | |
| Parks? | | | | |
| Other public facilities? | | | | |
| This project will have no impact on public services. | | | | |

| Issues | Potentially Significant Impact | Potentially Significant Unless Mitigation Incorporated | Less Than Significant Impact | No Impact or Positive Impact |
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| XIV. RECREATION. Would the proposal: | | | | |
| a. Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? | 0 | | 0 | • |
| b. Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment? | | | | • |
| This project is expected to enhance recreational resources as a result of the environmental enhancements. Restoration of the project area will provide passive recreational activities that are not currently provided by fallow agricultural fields. Although the Refuge is currently not accessible by the public, future plans include hiking and wildlife observation on the project area. | | | | |
| Issues | Potentially Significant Impact | Potentially Significant Unless Mitigation Incorporated | Less Than Significant Impact | No Impact or Positive Impact |
| XV. TRANSPORTATION/TRAFFIC. Would the proposal: | | | | |
| a. Cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in the number of vehicle trips, the volume to- capacity ratio on roads, or congestion at intersections)? | 0 | | _ | • |
| b. Cause, either individually or cumulatively, exceedance of a level-of-service standard established by the county congestion management agency for designated roads or highways? | | | | • |
| c. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks? | | | | |
| d. Substantially increase hazards because of a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? | | | | • |
| e. Result in inadequate emergency access? | | | | |
| f. Result in inadequate parking capacity? | | | | |
| g. Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)? | | | | • |
| This project will have no impact on transportation or | traffic. | | | |

| Issues | Potentially Significant Impact | Potentially Significant Unless Mitigation Incorporated | Less Than Significant Impact | No Impact or Positive Impact | |
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| XVI. UTILITIES AND SERVICE SYSTEMS. Would the proposal: | | | | | |
| proposal. | | | | | |
| a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board? | | | | • | |
| b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? | | | | • | |
| c. Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? | | | | • | |
| d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or would new or expanded entitlements be needed? | | | | • | |
| e. Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments? | | | | • | |
| f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs? | | | | | |
| g. Comply with federal, state, and local statutes and regulations related to solid waste? | | | | • | |
| The project will have no effects on utilities and service systems. Some below ground utilities occur in the project area, but the establishment of riparian trees, shrubs, and native grass species are consistent with management requirements of the utilities, and will not affect utility infrastructure or maintenance access. | | | | | |
| Issues | Potentially Significant Impact | Potentially Significant Unless Mitigation Incorporated | Less Than Significant Impact | No Impact or Positive Impact | |
| XVII. MANDATORY FINDINGS OF SIGNIFICANCE. | | | | | |
| a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal | | | | • | |

| | Issues | Potentially Significant Impact | Potentially Significant Unless Mitigation Incorporated | Less Than Significant Impact | No Impact or Positive Impact |
|----|--|--------------------------------------|--|------------------------------------|------------------------------|
| | community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory? | | | | |
| b. | Does the project have impacts that are individually limited but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.) | | | • | |
| b. | Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly? | | | | • |

SOCIOECONOMIC ISSUES RELATED TO AGRICULTURE

A May 4, 2005 directive from the Secretary for Resources directs agencies preparing environmental documents for resource-related projects that involve agricultural land to include a separate section that describes the social and economic effects of using farmland to restore wildlife or fish habitat. In assessing these effects, this document is considering consistency with public policies, which reflects the degree to which the project may cause discord in a local community, effects on recreation and other sources of social well being, and effects on the agricultural economy and jobs.

<u>Public Policies.</u> The proposed project is consistent with and supported by a number of federal, state and local programs that are influencing land uses along the Sacramento River. These programs include:

- CALFED Program, a consortium of federal and state agencies working to restore the ecological health of the Bay-Delta.
- Comprehensive study on the Sacramento and San Joaquin River basins, a project of USACE and The Reclamation Board that involves integration of ecosystem restoration into plans for an improved flood management system.
- USFWS management of the SRNWR in accordance with the USFWS CCP
- SRCA Forum, designed as an outcome of SB 1086 to guide management of riparian habitat and agricultural uses along the Sacramento River.

The project is consistent with these programs. For example, it conforms to a variety of provisions in the CALFED Record of Decision to protect agriculture.

- It restores 250 acres of degraded habitat.
- It restores habitat on public lands rather than converting privately-owned agricultural land.
- It is on land acquired from a willing seller where part of the reason to sell was an economic hardship, because the land flooded.
- It uses a phased habitat development approach in concert with adaptive management. The restoration design is based on experience with prior Sacramento River riparian habitat restorations and will be implemented in two phases, with 200 acres restored now, followed by monitoring to assess the restoration's outcome, and the final 250 restored later.
- It includes weed management to control invasive species during restoration, so that the site
 does not become a locus for infestations from which weeds could spread to adjacent
 properties or downstream.
- The project has been coordinated with adjacent landowners, who support the project, and with the Sacramento River Area Forum, which found the project consistent with its technical manual.

The project is supported by Tehama County, whose board has endorsed the project.

<u>Recreation</u>. The project will improve outdoor recreation along the Sacramento River. Restoration of the site will enhance opportunities for birdwatching and enjoyment of river scenery by boaters on the adjacent reach of the Sacramento River. It will also remove a barrier to recreation at the site, where the USFWS will not allow recreation until restored vegetation has become established.

Agriculture. The project site is a tiny portion (barely 2/100th of a percent) of Tehama County's important farmlands, which total 245,355 acres. Its conversion will not, therefore, harm the agricultural economy in the county.

The loss of 200 acres of orchard will result in a loss of some agricultural jobs. A Nature Conservancy-funded study, *Socioeconomic Assessment of Proposed Habitat Restoration within the Riparian Corridor of the Sacramento River Conservation Area,* estimated that one direct job is created by each 100 acres of land in agricultural use in the area. Using this analysis, it is estimated that as a result of converting 200 acres from orchard to restoration, approximately 2 direct jobs would be lost. The jobs potentially lost by the project would be compensated for, in part, by the short-term creation of jobs for the site's restoration. According to River Partners, the project will necessitate 53 months of labor or 3.9 work years over the project's 4.5 year duration. This would be a short-term benefit during construction of the project. Long-term ecosystem management and recreation related jobs would also be generated by the project and would also compensate, in part, for the loss of agricultural jobs.

The cumulative effect of the project and other restoration activities on the SRNWR's La Barranca Unit would contribute to the incremental, cumulative conversion of farmland in Tehama County. However, the cumulative economic effects of this conversion would be offset over time by cost savings associated with reduction of flood damage and cost savings associated with monitoring and maintaining special-status species and their associated habitats. For these reasons, the net effect is not expected to be significant (North State Resources 2005).

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